

# THE HUMPBACK WHALE: SUMMER — A TIME FOR FEEDING

16 MM COLOR MOVIE, 21 MINUTES

Produced by Dr. Lee Tepley

22809C-1

681

## Scientific Consultants for

### "The Humpback Whale: Summer—A Time for Feeding"

DR. WILLIAM C. CUMMINGS, Chief Scientist, San Diego Natural History Museum

KEITH K. HOWELL, Editor: OCEANS Magazine

JAMES HUDNALL, Director, Maui Whale Research Institute

DR. KENNETH R. MARTIN, Director, The Kendall Whaling Museum

RONN STORRO-PATTERSON, Research Director, Whale Center International

DR. ROGER PAYNE, New York Zoological Society

"The Humpback Whale: Summer—A Time for Feeding" is the companion film to "The Humpback Whale: Winter—A Time for Singing." Although the two films complement each other, each is complete in its own right.

This film may be divided into the following parts:

## I. PHYSIOLOGY

Instead of teeth, Humpbacks, Blues and other baleen whales have a tough, flexible filter, which hangs down from the roof of the mouth and fits into the lower lip. The filter is made of up to 800 plates, which are brush-like on the inside. The brushes overlap to form a fine, bristly filter which is called "baleen." When feeding, the whale swims with mouth wide open. The mouth immediately fills with water and small animals. The whale then closes its mouth, expelling water through the baleen filter. Animals too large to pass through the baleen stay inside.

Humpbacks feed mostly upon small schooling fish and on tiny red shrimplike zooplankton, called Euphausiids, or "krill." Euphausiids are only a few centimeters long and sometimes occur in immense swarms. A Humpback can scoop up tens of thousands of krill at once. Its mouth expands into an enormous pouch while feeding, because of a series of pleats or folds under the lower jaw. After heavy feeding, Humpbacks rest—or perhaps even sleep—on the surface.

An adult Humpback may eat about a ton of food a day. It may reach a length of 15 meters, or about 50 feet, and weigh about 40 tons.

Other baleen whales, like the Blue and Fin, are even larger than the Humpback. The great size of baleen whales may be related to their ability to feed directly on the abundance of small organisms found in nutrient rich areas of the ocean.



The whale breathes through a blow-hole on top of its head. A "splash-guard" in front of the blow-hole helps keep out the water when the whale inhales.

When the whale exhales, spray rises as high as 6 meters, or 20 feet. One might think the water condenses from vapor blown from the whale's lungs, and perhaps some of it does. However, most observers believe that the largest part of the spray comes from water covering the blow-hole.

## II. BEHAVIOR

Every year Humpback whales migrate thousands of miles from their winter home in tropical waters to their summertime polar or sub-polar feeding grounds.

Humpbacks are especially well-known for their remarkable songs, which they sing most often in the tropics. The songs are the theme of the companion film, "The Humpback Whale: Winter—A Time for Singing."

Humpbacks have occasionally been observed to continue their singing after starting their polar migration, but they are mostly silent while in their summer feeding grounds. On rare occasions, Humpbacks make other sounds which are thought to be associated with feeding. Some observers feel that these sounds may be in the nature of special feeding songs.

Humpbacks employ an unusual feeding technique to trap both krill and small fish. They swim in a large circle and blow bubbles. As the bubbles rise to the surface, they create an artificial barrier which is rather like a net. Small schooling fish or krill inside the "bubble-net" may be afraid to swim through. The feeding Humpback then lunges up through the center with its mouth wide open, scooping up the fish or krill.

Humpbacks do a number of interesting things on the surface. Examples shown in this film are flipper-flopping, tail-lobbing, breaching, and a rare performance in which the flukes (or tail) are held out of the water for a long period of time, making it appear as if the whale is standing on its head.

Activities like flipper-flopping, tail-lobbing and breaching occur frequently in both polar and tropical waters. They all make big splashes and loud sounds which carry a long way in water. We don't know why Humpbacks do any of these things—perhaps to announce location, to show excitement or anger, or perhaps, sometimes, just to knock off barnacles.

Some types of Humpback behavior may serve to confuse predators. In what may be an evasive maneuver, a Humpback will sometimes blow underwater, surface quietly, breathe in and then quickly submerge. Sometimes Humpbacks blow dense clouds of bubbles which may form a protective screen. Humpbacks may also blow bubbles to show excitement or irritation.

The Humpback has few predators besides man. One predator is the Orca, or "Killer Whale." The Orca is not a baleen whale. It is a "toothed" whale and sometimes kills and eats large animals such as seals and sea lions. Although attacks have occasionally been observed, Orcas seldom bother Humpbacks in their northern feeding grounds, where they are often seen in the same area.

## III. CONSERVATION

It is hoped that this film (like its companion) will lead to increased awareness of the magnificence of the Humpback whale and, by inference, to an appreciation of all of the great whales. Increased awareness should in turn encourage efforts by conservationists to stop or at least limit commercial whaling.

The following information is intended to supplement the brief conservation message in the film itself and to assist in stimulating class discussion.

A. Humpback whales live in all the oceans of the world. They were not hunted to any significant extent until the introduction of modern whaling in the early 1900's. The localized nature of their populations, especially along coastlines, made them extremely vulnerable.

B. Of all the great whales, only the Right Whale and Bowhead are rarer than the Humpback. It has often been stated that the Blue Whale, which is the largest of the great whales, is near extinction. Yet, worldwide, the Blue Whale is twice as common as the Humpback.

C. The results of commercial whaling in the North Pacific are typical. Prior to 1905, the Humpback population is estimated to have been stable at about 15,000. Between 1905 and 1929, modern whaling techniques led to the killing of about 18,000 Humpbacks, and the original population was reduced to about 6,000. During the next three decades, the small remaining population made whaling for Humpbacks uneconomic, and the catch never exceeded the estimated sustainable yield of 240 whales per year.

D. From 1960 to 1965, Russian and Japanese whalers killed about 5,000 of the estimated North Pacific population of 6,000, reducing the Humpback population to about 1,000 whales. In 1966, the International Whaling Commission banned the commercial whaling of Humpbacks. Many observers believe there has been a slight increase in the North Pacific population since that time. It is thought that the Humpback population is slowly increasing in many other areas, and there is hope that Humpbacks will continue to increase worldwide.

For additional information contact:  
Moonlight Productions/Dr. Lee Tepley  
2243 Old Middlefield Way  
Mountain View, California 94043

123

123456

123